

WHAT IS CLAIMED:

Sub A1

1. An electrosurgical generator for applying energy to tissue to desiccate tissue, the controller comprising:
a controller for cycling the output power to cause a cycling of the tissue impedance; and
a tissue impedance measurement circuit for measuring impedance of the tissue;
wherein the controller terminates output power when the measured tissue impedance exceeds a predetermined value, the predetermined value corresponding to a desiccated condition of tissue.

2. The generator of claim 1, wherein the controller changes the output voltage to cycle the output power.

3. The generator of claim 1, wherein the controller changes the output current to cycle the output power.

4. The generator of claim 1, wherein the output voltage is cycled by lowering the output voltage once it reaches a predetermined maximum and raising the output voltage if the reduction in measured tissue impedance does not indicate desiccation of the tissue.

5. The generator of claim 1, wherein the output power is cycled at a relatively low frequency.

Sub A2

6. The generator of claim 5, wherein the frequency is between 1 and 20 Hz.

7. The generator of claim 6, wherein the output voltage does not exceed 120 volts.

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8. The generator of claim 1, further comprising a comparator wherein the measured tissue impedance value is compared to a first signal representative of a desired tissue impedance value by the comparator and a difference signal is produced.

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9. The generator of claim 8, wherein the difference signal is input to the controller which generates a signal to adjust the power.

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10. The generator of claim 9, wherein the first signal has a cyclic pattern.

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11. The generator of claim 10, wherein the first signal is a sine wave.

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12. An electrosurgical generator for treating tissue by applying electrosurgical energy comprising:

means for minimizing the burning of tissue, the minimizing means comprising a controller for repeatedly increasing and decreasing output power to the tissue to be treated, the controller adjusting the output power in response to the degree of desiccation of the tissue.

13. The generator of claim 12, wherein the output power is terminated upon detection of desiccated tissue.

14. The generator of claim 13, wherein the degree of desiccation of the tissue is determined by the measured impedance of the tissue.

15. The generator of claim 14, wherein the output power is adjusted by adjusting the output voltage within a predetermined voltage range.

16. The generator of claim 12, wherein the output power is repeatedly increased and decreased at a frequency between 1 and 20 Hz.

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17. A method for applying energy to tissue to treat tissue, the method including supplying a generator having a power control system to produce an adaptive oscillatory power curve to minimize the heating effect on tissue, the method comprising:

- a) applying a high current into a low impedance load until a maximum power is reached;
- b) adjusting the output voltage to maintain constant output power as impedance increases as tissue begins to desiccate;
- c) dropping the output power in response to a rapid rise in tissue impedance indicating the boiling of tissue;
- d) allowing the tissue impedance to fall to a predetermined minimum value and then raising the output power to cause an increase in tissue impedance;
- e) repeating steps b and c until impedance reaches a maximum value.

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18. A method for applying energy to tissue to treat tissue, the method including supplying a generator having a power control system to produce an adaptive oscillatory power curve to minimize the heating effect on tissue, the method comprising:

- a) applying a high current into a low impedance load until a maximum power is reached;
- b) adjusting the output voltage to maintain constant output power as impedance increases as tissue begins to desiccate;
- c) dropping the output power if the output voltage exceeds a maximum value;
- d) raising the output power after a predetermined period of time to cause an increase in tissue impedance; and
- e) repeating steps b and c until impedance reaches a maximum value.

Add AM7